AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough; and 2. added matter is shown by underlining.

1. (Currently Amended) A device designed to spray an overheated liquid in the form of very fine droplets at a very high speed, the overheated liquid relates to a liquid at a temperature To and to a pressure Po greater than the saturated vapor pressure corresponding to To, the vapor pressure Ps itself being greater than the pressure P1 of the gaseous medium in which the liquid is sprayed, ~~characterized in that~~ wherein the device comprises a nozzle body [[(1)]] fixed on a support [[(0)]] allowing the supply of overheated liquid, the nozzle body comprising a conduit [[(3)]] where the overheated liquid circulates, followed by one or more mixer heads and by one or more injectors [[(4)]] where the overheated liquid attains speed to open onto a divergent and speed attainment nozzle [[(5)]] where the liquid jet partially evaporates and instantaneously explodes under the effect of the pressure difference between the liquid and the ambient medium of the nozzle, to comprise a mixture of fine droplets and vapor, the generator of the divergent nozzle [[(5)]] presents a discontinuity, that is an angle, at its intersection with that of the injectors [[(4)]], and the exit section of this nozzle is sized so that the mixture is ejected from the nozzle at the pressure P1 of the external medium without forming a pressure wave in the divergent nozzle [[(5)]], the ejection speed of the mixture therefore corresponds to the maximum ejection speed.

2. (Currently Amended) The device according to claim 1, ~~characterized in that~~ wherein the angle of the generator of the divergent nozzle [[(5)]] with the injectors is vertical at its junction with the injectors [[(4)]].

3. (Currently Amended) The device according to one of claim[[s]] 1 [[or 2]], ~~characterized in that~~ wherein the divergent nozzle is partially or totally integrated with the external support [[(0)]].

4. (Currently Amended) A device designed to spray an overheated liquid in the form of very fine droplets at a very high speed, the overheated liquid relates to a liquid at a temperature To and to a pressure Po greater than the saturated vapor pressure Ps corresponding to To, the vapor pressure Ps itself being greater than the pressure P1 of the gaseous medium in which the liquid is sprayed, ~~characterized in that~~ wherein the device comprises a nozzle body [[(1)]] fixed on a support [[(0)]] allowing the supply of overheated liquid, the nozzle body comprising a conduit [[(3)]] where the overheated liquid circulates, followed by a mixer head and an annular injector passage section [[(16)]] where the overheated liquid attains speed to open into a divergent and speed attainment nozzle [[(5)]] where the liquid jet partially evaporates and instantaneously explodes under the effect of the pressure difference between the liquid and the ambient medium of the nozzle to comprise a mixture of fine droplets and vapor; the generator of the divergent nozzle [[(5)]] presents a discontinuity, that is an angle, at its intersection with that of the annular injector [[(16)]], and the exit section of this nozzle is sized so that the mixture is

ejected from the nozzle at the pressure P1 of the external medium without forming a pressure wave in the divergent nozzle [[(5)]]; the ejection speed of the mixture therefore corresponds to the maximum ejection speed.

5. (Currently Amended) The device according to claim 4, ~~characterized in that~~ wherein the annular injector comprises a free space between a cavity [[(16)]], for example cylindrical, and an injection core [[(8)]], the mode of fixation of the injection core on the nozzle body allows circulation of the liquid to be sprayed in the nozzle.

6. (Currently Amended) The device according to [[one of]] claim[[s]] 4 [[or 5]], ~~characterized in that~~ wherein, at its junction with the generator of the cavity [[(16)]], the angle of the generator of the divergent nozzle [[(5)]] with the injectors is perpendicular to the axis of this cavity.

7. (Currently Amended) The device according to [[one of]] claims 4 [[or 5]], characterized in that the divergent nozzle is partially or totally integrated with the external support [[(0)]].

8. (Currently Amended) A device designed to spray an overheated liquid in the form of very fine droplets at a very high speed, and allowing, for the same spray nozzle, the flow, pressure Po or temperature To of the overheated liquid upon entry to be modified as required, as well as the pressure P1 of the gaseous medium in which the liquid is sprayed, while maintaining a maximum ejection speed of sprayed droplets exiting the device, the overheated liquid being a

liquid at a temperature To and a pressure Po greater than the saturated vapor pressure Ps corresponding to To, the vapor pressure Ps itself being greater than the pressure P1 of the gaseous medium in which the liquid is sprayed, ~~characterized in that~~ wherein the device comprises:

[[-]] a nozzle body [[(1)]] fixed on a support [[(0)]] allowing the supply of overheated liquid, the nozzle body comprising a conduit [[(3)]] where the overheated liquid circulates, followed by one or more mixer heads and by one or more injectors [[(4)]] where the overheated liquid attains speed to open into a divergent and speed attainment nozzle [[(5)]] where the liquid jet partially evaporates and instantaneously explodes under the effect of the pressure difference between the liquid and the nozzle to comprise a mixture of fine droplets and vapor,

[[-]] a profiled core [[(11)]] housed in the divergent nozzle [[(5)]], that may slide on the axis of this nozzle, and allowing, according to its position, the exit section of this nozzle to be adjusted, the continuous and monotonic profiles of the generators of the divergent nozzle [[(5)]] and of the core [[(11)]] allowing an increasing passage section to be maintained between the nozzle [[(5)]] and the core [[(11)]] along the axis of the nozzle, whatever the position of the core [[(11)]], the generator of the divergent nozzle [[(5)]] presenting a discontinuity, that is an angle, at its intersection with that of the injectors [[(4)]], and

[[-]] a mechanism allowing the core [[(11)]] to be supported and its relative position with relation to the nozzle [[(5)]] to be adjusted from the outside.

9. (Currently Amended) The device according to claim 8, ~~characterized in that~~ wherein, at the junction with the generator of the cavity [[(16)]], the generator of the divergent nozzle [[(5)]] is perpendicular to the axis of this cavity.

10. (Currently Amended) The device according to [[one of]] claim[[s]] 8 [[or 9]] wherein, ~~characterized in that~~ the divergent nozzle is partially or totally integrated with the external support [[(0)]].

11. (Currently Amended) The device according to [[one of]] claim[[s]] 8 [[or 9]] wherein, ~~characterized in that~~ the positioning of the core [[(11)]] in the divergent nozzle [[(5)]] comprises automation in order to adjust the exit section of the nozzle so that the section corresponds to the flow, Pressure Po, and Temperature To of the overheated liquid upon entry, as well as to the Pressure P1 of the gaseous medium in which the liquid is sprayed, so that the ejection speed of the sprayed droplets exiting from the device is always maximum.

12. (Currently Amended) The device according to [[one of]] claim[[s]] 8 [[or 9]] wherein, ~~characterized in that~~ the injector is an annular injector [[(16)]], the annular injector being comprised of the free space between a cavity [[(16)]], for example cylindrical, and an injection core [[(8)]].

13. (Currently Amended) The device according to [[one of]] claim[[s]] 4 ~~or 5 or 9 or 9 (sic),~~ ~~characterized in that~~ wherein, the injection core [[(8)]] of the annular injector is a profiled

injection core [[(15)]] with a variable section increasing in the direction of flow that may slide on the axis of the cavity [[(4)]], the exit section of the injector may therefore be adjusted by adjusting the position of the profiled injection core [[(15)]] with relation to the cavity [[(4)]].